

Student Security Perceptions @ UIUC

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UIUC Canvas Course: Free to Students

- Phishing
- Strong Passwords & MFA
- Social Media Privacy
- Physical Device Security
- Cybersecurity Careers

Be a Cybersecurity Champion!



What do students care about?

[Personal Interest]

RQ1: Are students interested in the topics the course covers?* Do they think they're important?

[Security Culture]

RQ2: Do students perceive other students as being interested in these topics?

[Security Education]

RQ3: Where do students find security information? Do they look for optional courses such as the one provided by UIUC?

* We didn't include Cybersecurity Careers and added VPN as a substitute topic

Cybersecurity knowledge and awareness is low

- Students don't expect to experience cyber attacks/computer security incidents
- Heavy users of digital devices are usually the least knowledgeable and least aware of cyber security issues and prevention
- Challenges in cybersecurity education

≡ Forbes

ENTERPRISE TECH

Is Our Digital Future At Risk Because Of The Gen Z Skills Gap?

VentureBeat



Ignorance isn't bliss: How tech users lack fundamental cybersecurity knowledge

Methods

- Online Qualtrics survey
- UIUC students
- Recruitment through social media and email

Received approval via IRB #23510

What drives interest?

Personal Protection & Risk Assessment

P2: “be aware of the dangers I expose myself to and the level of risk I am willing to take”

Skill & Knowledge Acquisition

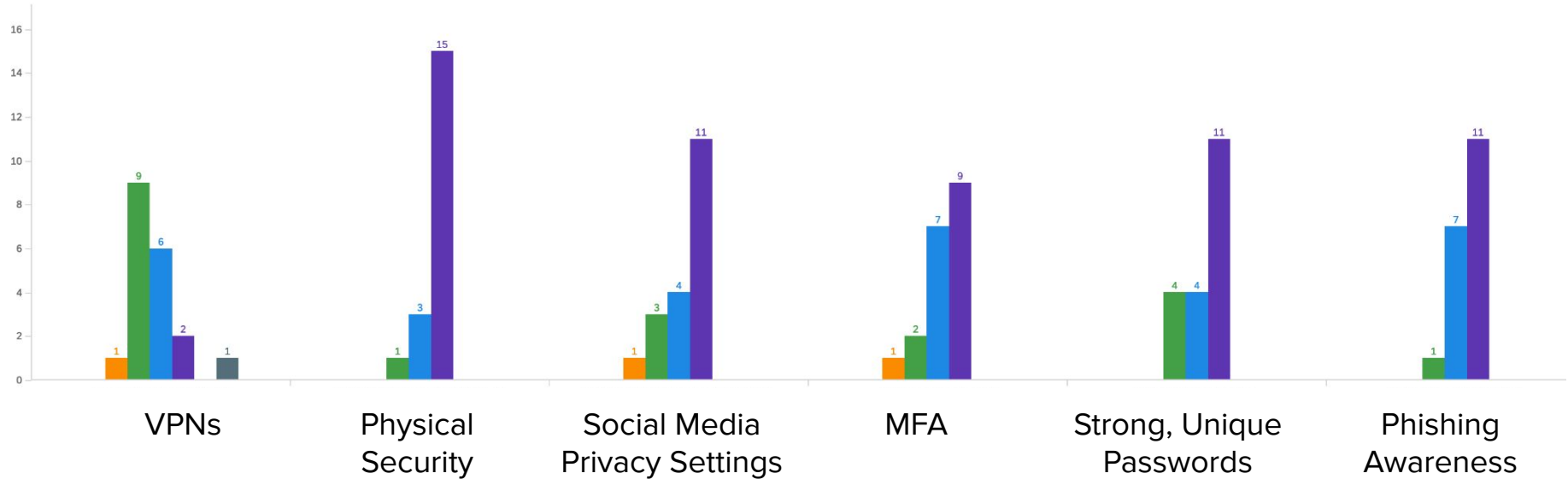
P12: “I think cybersecurity would be a useful skill to have in general”

Interested...in theory

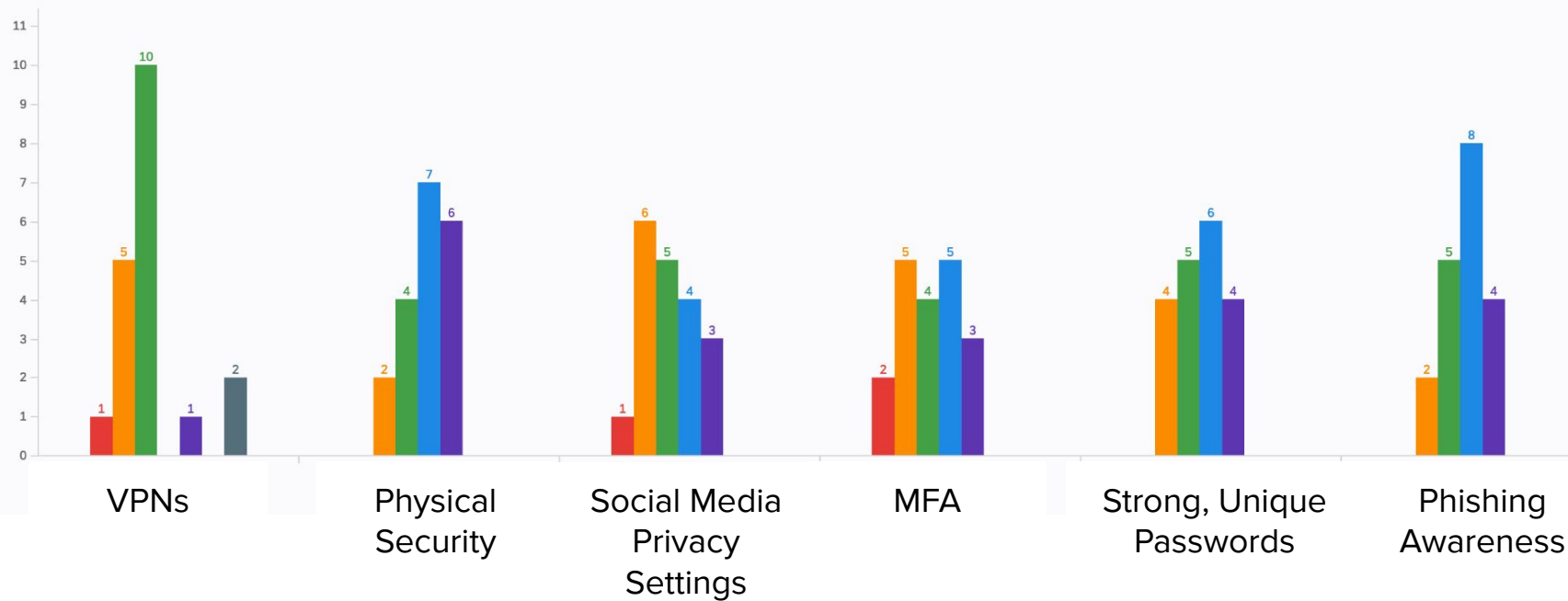
P11: “... but I also am uncertain if it'd actually be worthwhile compared to other topics”

P18: “I don't have much time with school and my other commitments so I often forget to look into it.”

Students find most topics important...



...but believe others find them less so



Most important topics

Strong, Unique Passwords

P3: “Passwords are usually hashed on remote systems, but you can never know when a company is operating particularly naively”

P11: “predictable passwords like Password123 can be broken in seconds but give the user the illusion of security.”

Multi-factor Authentication

P19: “any login without it or “I am not a robot” checks is vulnerable to pasting a function into the password portal for some form of attack”

All (or most) of them!

P13: “...strong passwords are useless if you leave your computer unlocked in public or fall victim to a phishing email”

Least important topics

VPN

P3: “plays on the ignorance of the average internet user who may want more privacy but has no idea how to achieve it.”

P4: “I don't think most private-use IP addresses are subject to attacks”

Phishing emails

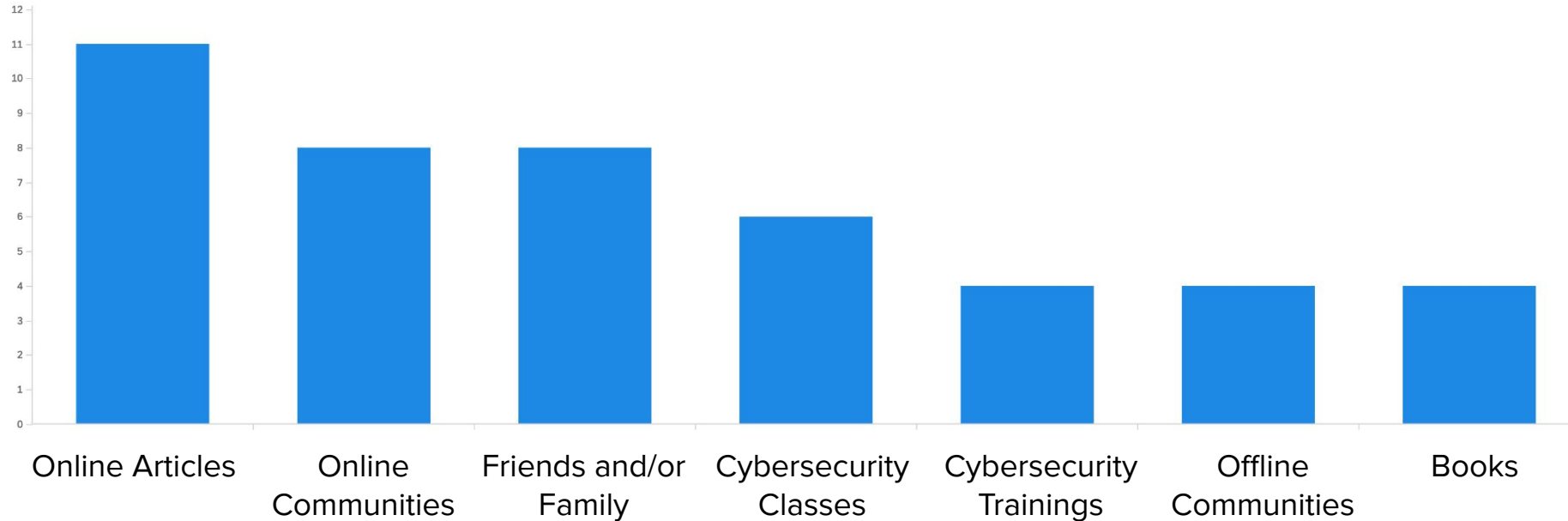
P10: “because most people can recognize spam easily.”

Social Media Privacy Settings

P11: “I'm not convinced that they do anything. Social media companies are constantly getting in trouble for mishandling their users' personal data.”

P19: “I'll say social media; doesn't really seem that private anyways so I don't see much point in fooling myself with fake layers of security.”

Where do students find information?



Varied Experiences, Varied Results

- Cybersecurity is important in theory, but not always priority
 - Especially among non CS or CS-adjacent students
 - → [RQ4]: Do CS and non-CS students have significantly different attitudes?
- The topics listed are important! (but not VPNs)
- Security culture is weak
 - “Others value security less than I do” attitude
- Students utilize *Convenience* and *Community*
 - A canvas course may be too impersonal
 - Participation is low →
 - → [RQ5]: Not interested or not advertised to?

Ordered by Recent Activity

1	1	🔖
1	1	🔖
2	2	🔖
2	2	🔖
8	8	🔖
4	4	🔖

Considerations for Future Work

- Online Articles and Communities
 - How might misinformation be mitigated?
- Range of CS experience in sample
 - 12 out of 19 responses majored in CS or CS-adjacent subjects (CS+X, iCAN, ECE)

Influential References

- Brodsky, J. E., Lodhi, A. K., Powers, K. L., Blumberg, F. C., & Brooks, P. J. (2021). “ It's just everywhere now”: Middle-school and college students' mental models of the Internet. *Human Behavior and Emerging Technologies*, 3(4), 495– 511. /
- Pawlowski, Suzanne D. and Jung, Yoonhyuk (2015) "Social Representations of Cybersecurity by University Students and Implications for Instructional Design," *Journal of Information Systems Education: Vol. 26 : Iss. 4 , 281-294.*